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Response to Office Action Dated 10/28/2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-4 (Canceled)

Claim 5 (Currently amended): ~~The apparatus of claim 3~~ An apparatus comprising:

a plurality of source ports, at least one of the source ports operable to receive complete

data packets successively at a higher data rate and to output data via a plurality of source port

outputs at a lower data rate;

a plurality of switching elements that form a sequential switching fabric and operate at the

lower data rate, at least one of the switching elements having

a plurality of switching element inputs individually connected to each of the

source port outputs

a plurality of switching element outputs

both the switching elements and the source ports operating to change a given one of the

source port outputs successively from a given one of the switching elements to a next available

switching element in response to a data packet event;

a plurality of destination ports, at least one of the destination ports operable to receive the

complete data packets successively at the lower data rate and having

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a plurality of destination port inputs individually connected to each of the

switching element outputs

a plurality of destination port outputs operable to output the complete data packets

at the higher data rate

both the switching elements and the destination ports operating to change a given one of

the destination port inputs successively from the given one of the switching elements to the next

available switching element in response to the data packet event

wherein the effective data rate from the source port outputs to the switching element

inputs and from the switching element outputs to the destination port inputs is the higher data

rate and the complete data packets of variable or fixed size are transferred through a single serial

link, the single serial link comprising a given one of the source ports, a given one of the

switching elements and a given one of the destination ports

wherein the ratio of higher to lower data rates is four to one and a minimum of four

switching elements per source port is supplied

wherein two additional switching elements provide for automatic redundancy and the

apparatus is operable to respond to a busy or failed switching element.

Claim 6 (Previously presented): The apparatus of claim 5 wherein two additional switching elements

provide additional bandwidth for overhead.

Claims 7-11 (Canceled)

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Claim 12 (Currently amended): ~~The apparatus of claim 11~~ An apparatus comprising:

a plurality of source ports, at least one of the source ports operable to receive complete

data packets successively at a higher data rate and to output data via a plurality of source port

outputs at a lower data rate;

a plurality of switching elements that form a sequential switching fabric and operate at the

lower data rate, at least one of the switching elements having

a plurality of switching element inputs individually connected to each of the

source port outputs

a plurality of switching element outputs

both the switching elements and the source ports operating to change a given one of the

source port outputs successively from a given one of the switching elements to a next available

switching element in response to a data packet event;

a plurality of destination ports, at least one of the destination ports operable to receive the

complete data packets successively at the lower data rate and having

a plurality of destination port inputs individually connected to each of the

switching element outputs

a plurality of destination port outputs operable to output the complete data packets

at the higher data rate

both the switching elements and the destination ports operating to change a given one of

the destination port inputs successively from the given one of the switching elements to the next

available switching element in response to the data packet event

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wherein the effective data rate from the source port outputs to the switching element

inputs and from the switching element outputs to the destination port inputs is the higher data

rate and the complete data packets of variable or fixed size are transferred through a single serial

link, the single serial link comprising a given one of the source ports, a given one of the

switching elements and a given one of the destination ports

wherein at least one of the source ports comprises

a communications processor coupled to the source port input and operable to

process the complete data packets at the higher data rate

a traffic manager having an input coupled to the communications processor, the

traffic manager further comprising

a sequential sprinkler engine operable to successively distribute the complete data

packets to the switching elements at the lower data rate

control logic operable to command the sequential sprinkler engine to output the

complete data packets successively on the source port outputs

wherein the control logic comprises

a controller operable to command the sequential sprinkler engine to successively

change the distribution of a given one of the complete data packets from busy or failed switching

elements to the next available switching element

a circuit operable to determine the timing of the data packet event and having an

output coupled to the controller

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a table of destinations operable to monitor the busy or failed switching elements

and having outputs coupled to the controller and the circuit.

Claim 13 (Previously presented): The apparatus of claim 12 wherein the control logic is operable to

respond to the busy or failed switching elements by commanding the sequential sprinkler engine to

successively distribute a given one of the complete data packets through the next available switching

element in the sequential switching fabric.

Claim 14 (Previously presented): The apparatus of claim 12 wherein the control logic provides

automatic redundancy upon failure of a given one of the switching elements by commanding the

sequential sprinkler engine to successively distribute a given one of the complete data packets

through the next available switching element in the sequential switching fabric.

Claim 15 (Canceled)

Claim 16 (Currently amended): ~~The apparatus of claim 15~~ An apparatus comprising:

a plurality of source ports, at least one of the source ports operable to receive complete

data packets successively at a higher data rate and to output data via a plurality of source port

outputs at a lower data rate;

a plurality of switching elements that form a sequential switching fabric and operate at the

lower data rate, at least one of the switching elements having

a plurality of switching element inputs individually connected to each of the

source port outputs

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a plurality of switching element outputs

both the switching elements and the source ports operating to change a given one of the

source port outputs successively from a given one of the switching elements to a next available

switching element in response to a data packet event;

a plurality of destination ports, at least one of the destination ports operable to receive the

complete data packets successively at the lower data rate and having

a plurality of destination port inputs individually connected to each of the

switching element outputs

a plurality of destination port outputs operable to output the complete data packets

at the higher data rate

both the switching elements and the destination ports operating to change a given one of

the destination port inputs successively from the given one of the switching elements to the next

available switching element in response to the data packet event

wherein the effective data rate from the source port outputs to the switching element

inputs and from the switching element outputs to the destination port inputs is the higher data

rate and the complete data packets of variable or fixed size are transferred through a single serial

link, the single serial link comprising a given one of the source ports, a given one of the

switching elements and a given one of the destination ports

wherein at least one of the destination ports comprises

a traffic manager, the traffic manager further comprising

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a sequential sprinkler engine operable to successively receive the complete data packets from the switching elements at the lower data rate

control logic operable to command the sequential sprinkler engine to successively receive the complete data packets on the destination port inputs

a communications processor operable to output the complete data packets at the higher data rate and having an input coupled to the traffic manager and an output coupled to the destination port output

wherein the control logic comprises

a controller operable to command the sequential sprinkler engine to change receiving paths successively from busy or failed switching elements to the next available switching element

a circuit operable to determine the timing of the data packet event and having an output coupled to the controller

a table of destinations operable to monitor the busy or failed switching elements and having outputs coupled to the controller and the circuit.

Claim 17 (Previously presented): The apparatus of claim 16 wherein the control logic is operable to respond to the busy or failed switching elements by commanding the sequential sprinkler engine to successively receive a given one of the complete data packets through the next available switching element in the sequential switching fabric.

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Claim 18 (Previously presented): The apparatus of claim 16 wherein the control logic provides automatic redundancy upon failure of a given one of the switching elements by commanding the sequential sprinkler engine to successively receive a given one of the complete data packets through the next available switching element in the sequential switching fabric.

Claim 19 (Currently amended): ~~The method of claim 2~~ A method comprising

receiving frames at inputs of a plurality of source ports at a higher data rate

successively distributing complete data packets at a lower data rate on a plurality of source port outputs that form multiple parallel channels to a plurality of switching elements in response to a data packet event

receiving the complete data packets on a given one of a plurality of switching element inputs that are individually connected to the source port outputs wherein the effective throughput of data is the higher data rate from the source port outputs to the switching element inputs

transferring the complete data packets on a given one of a plurality of switching element outputs to a given one of a plurality of destination ports

successively receiving the complete data packets at the lower data rate in response to the data packet event on a given one of a plurality of destination port inputs that form multiple parallel channels wherein the plurality of destination port inputs are individually connected to the switching element outputs and the effective throughput of data is the higher data rate from the switching element outputs to the destination port inputs

outputting the complete data packets on a destination port output at the higher data rate

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<u>wherein complete data packets are routed through a single serial link, the single serial link</u>

<u>comprising a given one of the source ports, a given one of the switching elements and a given</u>

<u>one of the destination ports</u>

wherein successively distributing the complete data packets further comprises

determining an ultimate destination for the complete data packets through the

plurality of switching elements that form a switching fabric

determining a next available switching element by monitoring busy or failed

switching elements

commanding the sequential sprinkler engine to successively distribute a given one

of the complete data packets through the next available switching element in the sequential

switching fabric.

Claims 20-23 (Canceled)

Claim 24 (Previously presented): The method of claim 19 wherein determining the next available

switching element by monitoring the failed switching element and successively distributing the

complete data packet to the next available switching element provides automatic redundancy.

Claim 25 (Currently amended): ~~The method of claim 2~~ <u>A method comprising</u>

<u>receiving frames at inputs of a plurality of source ports at a higher data rate</u>

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successively distributing complete data packets at a lower data rate on a plurality of

source port outputs that form multiple parallel channels to a plurality of switching elements in

response to a data packet event

receiving the complete data packets on a given one of a plurality of switching element

inputs that are individually connected to the source port outputs wherein the effective throughput

of data is the higher data rate from the source port outputs to the switching element inputs

transferring the complete data packets on a given one of a plurality of switching element

outputs to a given one of a plurality of destination ports

successively receiving the complete data packets at the lower data rate in response to the

data packet event on a given one of a plurality of destination port inputs that form multiple

parallel channels wherein the plurality of destination port inputs are individually connected to the

switching element outputs and the effective throughput of data is the higher data rate from the

switching element outputs to the destination port inputs

outputting the complete data packets on a destination port output at the higher data rate

wherein complete data packets are routed through a single serial link, the single serial link

comprising a given one of the source ports, a given one of the switching elements and a given

one of the destination ports

wherein sequentially receiving the complete data packets further comprises

receiving the complete data packets from the plurality of switching elements that

form a switching fabric

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      determining a next available switching element by monitoring busy or failed

switching elements

      commanding the sequential sprinkler engine to successively receive a given one of

the complete data packets from the next available switching element in the sequential switching

fabric.

Claims 26-29 (Canceled)

Claim 30 (Previously presented): The method of claim 25 wherein determining the next available

switching element by monitoring the failed switching element and successively distributing the

complete data packet to the next available switching element provides automatic redundancy.

Claims 31-32 (Canceled)

Claim 33 (Currently amended): ~~The apparatus of claim 32~~ <u>An apparatus comprising:</u>

      <u>a plurality of source ports operable to receive frames at a higher data rate, at least one of</u>

<u>the source ports comprising</u>

      <u>a source port input</u>

      <u>a plurality of source port outputs providing multiple parallel channels, wherein at least</u>

<u>one of the source ports is operable to sequentially output complete data packets through the</u>

<u>multiple parallel channels at a lower data rate</u>

      <u>a plurality of switching elements forming a sequential switching fabric and operating at</u>

<u>the lower data rate, the switching elements each comprising</u>

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a plurality of switching element inputs individually coupled to the source port outputs

a plurality of switching element outputs

a plurality of destination ports operable to sequentially receive the complete data packets

at the lower data rate and output the complete data packets at the higher data rate, at least one of

the destination ports comprising

a plurality of destination port inputs individually coupled to the switching element

outputs

a destination port output

wherein the complete data packets having uniform or variable size are routed through a

single serial link while sustaining throughput at the higher data rate, the single serial link formed

by a given one of the source ports, a given one of the switching elements and a given one of the

destination ports

wherein at least one of the source ports comprises

a communications processor coupled to the source port input and operable to

process the complete data packets at the higher data rate

a traffic manager having an input coupled to the communications processor, the

traffic manager further comprising

a sequential sprinkler engine operable to successively distribute the complete data

packets to the switching elements at the lower data rate

control logic operable to command the sequential sprinkler engine to output the

complete data packets successively on the source port outputs

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    wherein the control logic comprises

        a controller operable to command the sequential sprinkler engine to successively

change the output of a given one of the complete data packets from busy or failed switching

elements to the next available switching element

        a circuit operable to determine the timing of the data packet event and having an

output coupled to the controller

        a table of destinations operable to monitor the busy or failed switching elements

and having outputs coupled to the controller and the circuit.

Claim 34 (Currently amended): ~~The apparatus of claim 32~~ An apparatus comprising:

        a plurality of source ports operable to receive frames at a higher data rate, at least one of

the source ports comprising

        a source port input

        a plurality of source port outputs providing multiple parallel channels, wherein at least

one of the source ports is operable to sequentially output complete data packets through the

multiple parallel channels at a lower data rate

        a plurality of switching elements forming a sequential switching fabric and operating at

the lower data rate, the switching elements each comprising

        a plurality of switching element inputs individually coupled to the source port outputs

        a plurality of switching element outputs

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a plurality of destination ports operable to sequentially receive the complete data packets

at the lower data rate and output the complete data packets at the higher data rate, at least one of

the destination ports comprising

a plurality of destination port inputs individually coupled to the switching element

outputs

a destination port output

wherein the complete data packets having uniform or variable size are routed through a

single serial link while sustaining throughput at the higher data rate, the single serial link formed

by a given one of the source ports, a given one of the switching elements and a given one of the

destination ports

wherein at least one of the source ports comprises

a communications processor coupled to the source port input and operable to

process the complete data packets at the higher data rate

a traffic manager having an input coupled to the communications processor, the

traffic manager further comprising

a sequential sprinkler engine operable to successively distribute the complete data

packets to the switching elements at the lower data rate

control logic operable to command the sequential sprinkler engine to output the complete

data packets successively on the source port outputs

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wherein the control logic is operable to respond to the busy or failed switching elements

by commanding the sequential sprinkler engine to successively distribute a given one of the

complete data packets through the next available switching element in the sequential switching

fabric.

Claim 35 (Currently amended): ~~The apparatus of claim 32~~ An apparatus comprising:

a plurality of source ports operable to receive frames at a higher data rate, at least one of

the source ports comprising

a source port input

a plurality of source port outputs providing multiple parallel channels, wherein at least

one of the source ports is operable to sequentially output complete data packets through the

multiple parallel channels at a lower data rate

a plurality of switching elements forming a sequential switching fabric and operating at

the lower data rate, the switching elements each comprising

a plurality of switching element inputs individually coupled to the source port outputs

a plurality of switching element outputs

a plurality of destination ports operable to sequentially receive the complete data packets

at the lower data rate and output the complete data packets at the higher data rate, at least one of

the destination ports comprising

a plurality of destination port inputs individually coupled to the switching element

outputs

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a destination port output

wherein the complete data packets having uniform or variable size are routed through a single serial link while sustaining throughput at the higher data rate, the single serial link formed by a given one of the source ports, a given one of the switching elements and a given one of the destination ports

wherein at least one of the source ports comprises

a communications processor coupled to the source port input and operable to process the complete data packets at the higher data rate

a traffic manager having an input coupled to the communications processor, the traffic manager further comprising

a sequential sprinkler engine operable to successively distribute the complete data packets to the switching elements at the lower data rate

control logic operable to command the sequential sprinkler engine to output the complete data packets successively on the source port outputs

wherein the control logic provides automatic redundancy upon failure of a given one of the switching elements by commanding the sequential sprinkler engine to successively distribute a given one of the complete data packets through the next available switching element in the sequential switching fabric.

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Claim 36 (Canceled)

Claim 37 (Currently amended): ~~The apparatus of claim 36~~ An apparatus comprising:

a plurality of source ports operable to receive frames at a higher data rate, at least one of

the source ports comprising

a source port input

a plurality of source port outputs providing multiple parallel channels, wherein at least

one of the source ports is operable to sequentially output complete data packets through the

multiple parallel channels at a lower data rate

a plurality of switching elements forming a sequential switching fabric and operating at

the lower data rate, the switching elements each comprising

a plurality of switching element inputs individually coupled to the source port outputs

a plurality of switching element outputs

a plurality of destination ports operable to sequentially receive the complete data packets

at the lower data rate and output the complete data packets at the higher data rate, at least one of

the destination ports comprising

a plurality of destination port inputs individually coupled to the switching element

outputs

a destination port output

wherein the complete data packets having uniform or variable size are routed through a

single serial link while sustaining throughput at the higher data rate, the single serial link formed

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by a given one of the source ports, a given one of the switching elements and a given one of the

destination ports

    wherein at least one of the destination ports comprises

        a traffic manager, the traffic manager further comprising

        a sequential sprinkler engine operable to successively receive the complete data

packets from the switching elements at the lower data rate

        control logic operable to command the sequential sprinkler engine to successively

receive the complete data packets on the destination port inputs

        a communications processor operable to output the complete data packets at the

higher data rate and having an input coupled to the traffic manager and an output coupled to the

destination port output

    wherein the control logic comprises

        a controller operable to command the sequential sprinkler engine to change

receiving paths successively from busy or failed switching elements to the next available

switching element

        a circuit operable to determine the timing of the data packet event and having an

output coupled to the controller

        a table of destinations operable to monitor the busy or failed switching elements

and having outputs coupled to the controller and the circuit.

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Claim 38 (Previously presented): The apparatus of claim 37 wherein the control logic is operable to respond to the busy or failed switching elements by commanding the sequential sprinkler engine to successively receive a given one of the complete data packets through the next available switching element in the sequential switching fabric.

Claim 39 (Previously presented): The apparatus of claim 37 wherein the control logic provides automatic redundancy upon failure of a given one of the switching elements by commanding the sequential sprinkler engine to successively receive a given one of the complete data packets through the next available switching element in the sequential switching fabric.

Claim 40 (Canceled)

Claim 41 (Currently amended): ~~The method of claim 40~~ A method comprising:

receiving frames at an input of a plurality of source ports at a higher data rate

sequentially distributing complete data packets at a lower data rate from a plurality of source port outputs to a plurality of switching elements

receiving the complete data packets at a lower data rate on a plurality of switching element inputs

transferring the complete data packets to a plurality of destination ports

sequentially receiving the complete data packets at a lower data rate on a plurality of destination port inputs

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outputting the complete data packets from a given one of the destination ports at the

higher data rate

wherein the complete data packets are routed through a single serial link while sustaining

throughput at the higher data rate, the single serial link formed by a given one of the source ports,

a given one of the switching elements and a given one of the destination ports

wherein successively distributing the complete data packets further comprises

determining an ultimate destination for the complete data packets through the

plurality of switching elements that form a switching fabric

determining a next available switching element by monitoring a busy or failed

switching element

commanding the sequential sprinkler engine to successively distribute a given one

of the complete data packets through the next available switching element in the sequential

switching fabric.

Claim 42-45 (Canceled)

Claim 46 (Previously presented): The method of claim 41 wherein determining the next available

switching element by monitoring the failed switching elements and successively distributing the

complete data packet to the next available switching element provides automatic redundancy.

Claim 47 (Currently amended): The method of claim 40 A method comprising:

receiving frames at an input of a plurality of source ports at a higher data rate

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sequentially distributing complete data packets at a lower data rate from a plurality of source port outputs to a plurality of switching elements

receiving the complete data packets at a lower data rate on a plurality of switching element inputs

transferring the complete data packets to a plurality of destination ports

sequentially receiving the complete data packets at a lower data rate on a plurality of destination port inputs

outputting the complete data packets from a given one of the destination ports at the higher data rate

wherein the complete data packets are routed through a single serial link while sustaining throughput at the higher data rate, the single serial link formed by a given one of the source ports, a given one of the switching elements and a given one of the destination ports

wherein sequentially receiving the complete data packets further comprises

receiving the complete data packets from the plurality of switching elements that form a switching fabric

determining a next available switching element by monitoring busy or failed switching elements

commanding the sequential sprinkler engine to successively receive a given one of the complete data packets from the next available switching element in the sequential switching fabric.

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Claim 48 (Previously presented): The method of claim 47 wherein the number of switching elements is proportional to the ratio of the high to low data rates.

Claim 49 (Previously presented): The method of claim 47 wherein the number of switching elements is upwardly scalable to accommodate greater data input.

Claim 50 (Previously presented): The method of claim 47 wherein the complete data packet transferred on one serial link minimizes overhead by avoiding the break up of each data packet into segments requiring headers.

Claim 51 (Previously presented): The method of claim 47 wherein each data packet event is defined as completing the transfer of one data packet and beginning the transfer of another data packet immediately.

Claim 52 (Previously presented): The method of claim 48 wherein determining the next available switching element by monitoring the failed switching elements and successively distributing the complete data packet to the next available switching element provides automatic redundancy.

Claims 53-54 (Canceled)

Claim 55 (Currently amended): ~~The apparatus of claim 54~~ An apparatus comprising:

a plurality of source ports for sequentially distributing complete data packets to a plurality of switching elements at a lower data rate wherein some latency occurs between the complete data packets

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a plurality of destination ports for sequentially receiving complete data packets from the

plurality of switching elements at the lower data rate wherein some latency occurs between the

complete data packets

both the source ports and destination ports operating approximately at the higher data rate

wherein the complete data packets are routed through a single serial link at a data packet

event while sustaining throughput from the source ports to the switching elements and the

switching elements to the destination ports at the higher data rate

wherein at least one of the source ports comprises

a communications processor operable to process the complete data packets at the

higher data rate

a traffic manager having an input coupled to the communications processor, the

traffic manager further comprising

a sequential sprinkler engine operable to successively distribute the complete data

packets to the switching elements at the lower data rate

control logic operable to command the sequential sprinkler engine to output the

complete data packets successively

wherein the control logic comprises

a controller operable to command the sequential sprinkler engine to successively

change the output of a given one of the complete data packets from busy or failed switching

elements to a next available switching element

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a circuit operable to determine the timing of the data packet event and having an

output coupled to the controller

a table of destinations operable to monitor the busy or failed switching elements

and having outputs coupled to the controller and the circuit.

Claim 56 (Previously presented): The apparatus of claim 55 wherein the control logic is operable to

respond to the busy or failed switching elements by commanding the sequential sprinkler engine to

successively distribute a given one of the complete data packets through the next available switching

element in the sequential switching fabric.

Claim 57 (Previously presented): The apparatus of claim 55 wherein the control logic provides

automatic redundancy upon failure of a given one of the switching elements by commanding the

sequential sprinkler engine to successively distribute a given one of the complete data packets

through the next available switching element in the sequential switching fabric.

Claim 58 (Canceled)

Claim 59 (Currently amended): ~~The apparatus of claim 58~~ An apparatus comprising:

a plurality of source ports for sequentially distributing complete data packets to a plurality

of switching elements at a lower data rate wherein some latency occurs between the complete

data packets

   a plurality of destination ports for sequentially receiving complete data packets from the plurality of switching elements at the lower data rate wherein some latency occurs between the complete data packets

   both the source ports and destination ports operating approximately at the higher data rate

   wherein the complete data packets are routed through a single serial link at a data packet event while sustaining throughput from the source ports to the switching elements and the switching elements to the destination ports at the higher data rate

   wherein at least one of the destination ports comprises

     a traffic manager, the traffic manager further comprising

     a sequential sprinkler engine operable to successively receive the complete data packets from the switching elements at the lower data rate

     control logic operable to command the sequential sprinkler engine to successively receive the complete data packets

     a communications processor operable to output the complete data packets at the higher data rate and having an input coupled to the traffic manager

   wherein the control logic comprises

     a controller operable to command the sequential sprinkler engine to change receiving paths successively from busy or failed switching elements to a next available switching element

     a circuit operable to determine the timing of the data packet event and having an output coupled to the controller

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a table of destinations operable to monitor the busy or failed switching elements

and having outputs coupled to the controller and the circuit.

Claim 60 (Previously presented): The apparatus of claim 59 wherein the control logic is operable to

respond to the busy or failed switching elements by commanding the sequential sprinkler engine to

successively receive a given one of the complete data packets through the next available switching

element in the sequential switching fabric.

Claim 61 (Previously presented): The apparatus of claim 59 wherein the control logic provides

automatic redundancy upon failure of a given one of the switching elements by commanding the

sequential sprinkler engine to successively receive a given one of the complete data packets through

the next available switching element in the sequential switching fabric.

Claim 62 (Canceled)

Claim 63 (Currently amended): The method of claim 62 A method comprising:

sequentially distributing complete data packets from a plurality of source ports to a

plurality of switching elements at a lower data rate wherein some latency occurs between the

complete data packets

sequentially receiving complete data packets from the switching elements to a plurality of

destination ports at the lower data rate wherein some latency occurs between the complete data

packets

both the source ports and destination ports operating approximately at the higher data rate

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wherein the complete data packets are routed through a single serial link at a data packet

event while sustaining throughput from the source ports to the switching elements and the

switching elements to the destination ports at the higher data rate

wherein successively distributing the complete data packets further comprises

determining an ultimate destination for the complete data packets through the

plurality of switching elements that form a switching fabric

determining a next available switching element by monitoring busy or failed

switching elements

commanding the sequential sprinkler engine to successively distribute a given one

of the complete data packets through the next available switching element in the sequential

switching fabric.

Claims 64-67 (Canceled)

Claim 68 (Previously presented): The method of claim 63 wherein determining the next available

switching element by monitoring the failed switching elements and successively distributing the

complete data packet to the next available switching element provides automatic redundancy.

Claim 69 (Currently amended): ~~The method of claim 62~~ A method comprising:

sequentially distributing complete data packets from a plurality of source ports to a

plurality of switching elements at a lower data rate wherein some latency occurs between the

complete data packets

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sequentially receiving complete data packets from the switching elements to a plurality of destination ports at the lower data rate wherein some latency occurs between the complete data packets

both the source ports and destination ports operating approximately at the higher data rate

wherein the complete data packets are routed through a single serial link at a data packet event while sustaining throughput from the source ports to the switching elements and the switching elements to the destination ports at the higher data rate

wherein sequentially receiving the complete data packets further comprises

receiving the complete data packets from the plurality of switching elements that form a switching fabric

determining a next available switching element by monitoring busy or failed switching elements

commanding the sequential sprinkler engine to successively receive a given one of the complete data packets from the next available switching element in the sequential switching fabric.

Claim 70 (Previously presented): The method of claim 69 wherein the number of switching elements is proportional to the ratio of the high to low data rates.

Claim 71 (Previously presented): The method of claim 69 wherein the number of switching elements is upwardly scalable to accommodate greater data input.

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Claim 72 (Previously presented): The method of claim 69 wherein the complete data packet transferred on one serial link minimizes overhead by avoiding the break up of each data packet into segments requiring headers.

Claim 73 (Previously presented): The method of claim 69 wherein each data packet event is defined as completing the transfer of one data packet and beginning the transfer of another data packet immediately.

Claim 74 (Previously presented): The method of claim 70 wherein determining the next available switching element by monitoring the failed switching elements and successively distributing the complete data packet to the next available switching element provides automatic redundancy.

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